

Factory-Built Buildings

Arizona

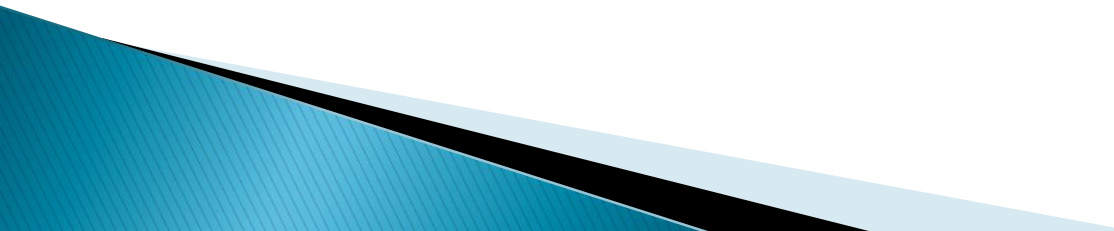
**Department of Fire, Building
and Life Safety**

Office of Manufactured Housing



Definition by Arizona Statute

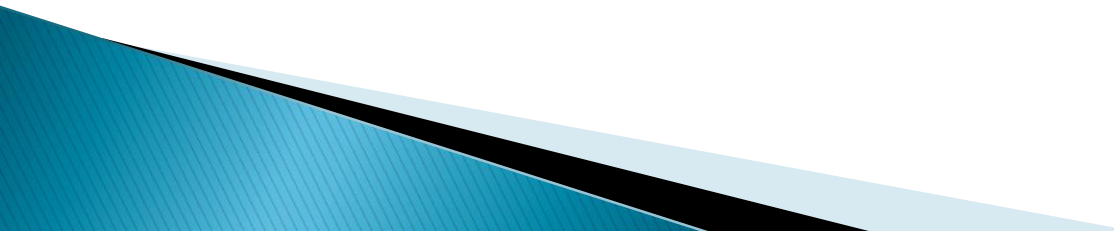
"Factory-built building" means a residential or nonresidential building including a dwelling unit or habitable room thereof which is either wholly or in substantial part manufactured at an off-site location to be assembled on-site, except that it does not include a manufactured home, recreational vehicle or mobile home as defined by Arizona Statute.

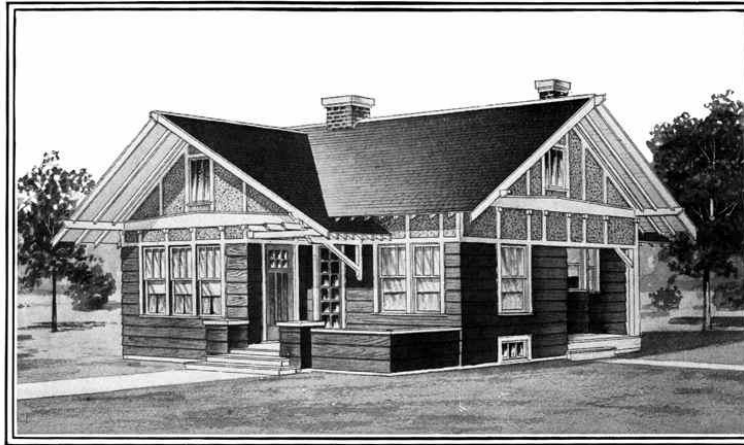


Factory-Built Building ("Modular")

- History parallel to manufactured housing
- Modular developed from the "prefab" tradition
- Prefab evolved into three dimensional units
- Includes commercial and residential
- Limited only by the imagination
- Regulated by states (sometimes) – regular building codes
- Eastern U.S. – 40% of new homes, integration of modular components with site built*

*Modular Housing Training Institute





MODERN HOME No. 191



\$892⁰⁰

For \$892.00 we will furnish all the material to build this Five-Room Bungalow consisting of Lumber, Lath, Shingles, Mill Work, Flooring, Ceiling, Finishing Lumber, Building Paper, Pipe, Gutter, Sash Weights, Hardware and Painting Material. NO EXTRAS, as we guarantee enough material at the above price to build this house according to our plans.

By allowing a fair price for labor, cement, brick and plaster, which we do not furnish, this house can be built for about \$1,800.00, including all material and labor.

For Our Offer of Free Plans See Page 3.

THIS California Bungalow has many points to recommend to the home builder who desires a real home, a dwelling that is something more than a place to exist.

The exterior leaves nothing to be desired. Sided with rough boards up to the height of 9 feet from the ground and stonekote or stucco under the wide overhanging eaves. There are two entrances to this bungalow from the front porch, one being a French door which opens into the dining room, the other a Craftsman door which opens into the living room. The living room with its beamed ceiling, rustic brick fireplace and built-in seat along side of the fireplace, is a large airy apartment, having three large windows and two sash which admit an abundance of light and air. The dining room is also a good size room and has an attractive buffet of oak built in one side. There are two bedrooms and a bathroom, each of the two bedrooms having a good size clothes closet. The kitchen is just the right size, has a nice pantry in which is built a pantry case.

This house can be finished with siding instead of stonekote at about the same price for the complete house.

Front door is of oak, 1 1/4 inches thick and made in the Craftsman style. Dining room door is made of oak, 1 1/2 inches thick and is the French style of door, having small sash extending from bottom of the door entirely to the top. All inside doors are oak, made in the Craftsman style. The rear door is 1 1/4 inches thick, made of soft pine and glazed with the best quality double strength glass. Craftsman oak trim throughout the house. Oak floor in the living and dining rooms and maple floor in the bedrooms and kitchen. Mosaic tile floor is furnished for the bathroom.

Built on a concrete foundation. Excavated under the entire house. We furnish cedar shingles and the best No. 1 quality framing timbers and siding.

Basement has a cement floor and is 7 feet from floor to joists. First floor is 9 feet from floor to ceiling.

Stain and paint for outside, varnish and wood filler for the interior finish.

This house, while it is only 28 feet wide, requires a lot at least 40 feet wide to set it off properly.

Complete Warm Air Heating Plant, for soft coal, extra.....	\$ 56.44
Complete Warm Air Heating Plant, for hard coal, extra.....	59.72
Complete Steam Heating Plant, extra.....	126.70
Complete Hot Water Heating Plant, extra.....	155.81
Complete Plumbing Outfit, extra.....	119.00

SEARS, ROEBUCK
AND CO.



CHICAGO,
ILLINOIS

1908 Sears (kit house)

Early 50's Modular Home

New Way HOME and COTTAGE WITH "Ada-Room" by United




- NEW-WAY HOMES COME COMPLETELY EQUIPPED.
- CEILING, FLOOR AND SIDE WALLS ARE FULLY INSULATED WITH FIBER-GLASS INSULATION AND ALSO VAPOR BARRIER.
- INTERIORS ARE AVAILABLE IN PAINTED OR VARNISH FINISH.

Write, wire or phone for complete information on territory available — plans and various design combinations.

United
MANUFACTURERS, Inc.
WILLIAMSTON, MICH.

THERE were no steamboats before Robert Fulton's time—and there were no airplanes before the Wright brothers built their Kittyhawk. Some one has to be first, and men of vision are always pioneering for new and better things.

In creating this new home with "Ada-Room" units, United is also pioneering—and at the same time filling a need for modern and comfortable living quarters in an economical and flexible manner. These New-Way Homes are manufactured in 22 and 27 foot body lengths with Ada-Rooms available in 8, 12, 16 or 24 foot lengths.



Residential Modular



Typical Lease Building



Wells Fargo, 51st Avenue and Baseline

Fort Hood Barracks





Fort Sam Houston Medical Dormitories



Pueblo del Sol Middle School - 60,000 square foot, two story facility





Dormitory in Morenci



City of Willcox Public Safety Complex



Apartments in Morenci

Arizona Adopted Codes

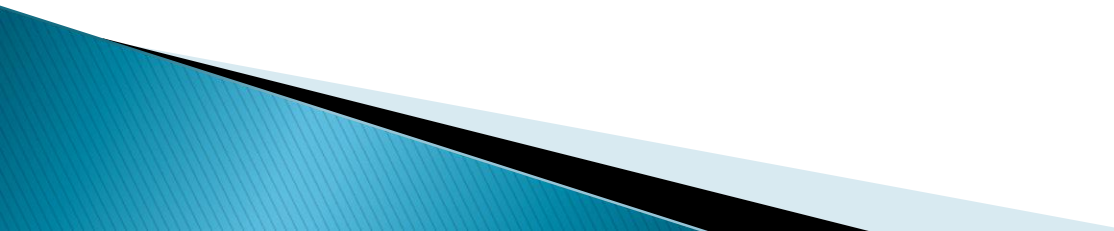
Modular – Manufactured in compliance with the International Code Council's body of codes and the National Electrical Code. Arizona is in the process of adopting the following codes:

- 2009 IBC
 - 2009 IRC
 - 2009 IPC
 - 2009 IFGC
 - 2009 IMC
 - 2009 IECC
 - 2008 NEC
- 

Why Build Modular? Affordability /Speed

Modular buildings may or may not be less expensive to build. The primary selling point for a modular is the speed at which it can be built.

Modular construction can be completed in 1/3 to 1/2 the time of comparable site built. This ability to construct the building and prep the site in parallel, allows occupancy or operations to proceed sooner. The speed of construction provides for a faster return on construction cost investment.



Affordability /Speed

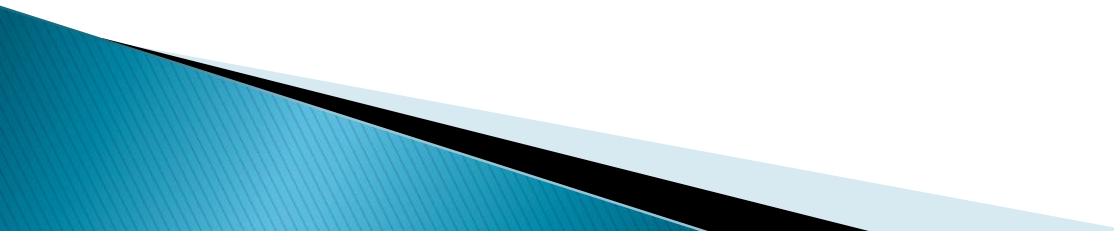
Production Line Techniques

- **Speed – Manufactured homes and modular buildings can be built in days or weeks, depending on size and complexity. Site construction and preparation can be done simultaneously, while the building is in the factory. Site built requires construction to be completed in steps, and is left to depend on contractors to finish their work before the next phase can proceed, sometimes delaying construction.**

Affordability /Speed

- **Controlled environment** – Primarily built indoors, out of the damaging sun, wind, rain and snow, the pace of construction is not impeded by inclement weather. Building materials are often stored out of the elements until used, thus reducing the amount of materials damaged by weather.
- **QA/Quality Control** – All phases of production are supervised and inspected prior to movement to the next phase or station in compliance with procedures established in the manufacturer's approved quality assurance manual. Inspections are documented on a quality control checklist (also known as a "traveler").

Affordability /Speed


- **Inspection by OMH – The inspection program is designed specifically for the factory production environment. The inspections take place in the factory, during each phase of construction, and follow behind the manufacturer's own in-plant inspection and QA/QC teams. Inspections involve not only examining buildings in production, but also the continuous evaluation of the manufacturer's QA program. The key component of this program is the continuing effectiveness of the manufacturer's QA program.**
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Who has Jurisdiction?

State:

- All building design approvals prior to construction of unit
- Foundation and installation plan approval prior to installation of unit
- Site inspection of building and foundation (State or IGA)

Local:

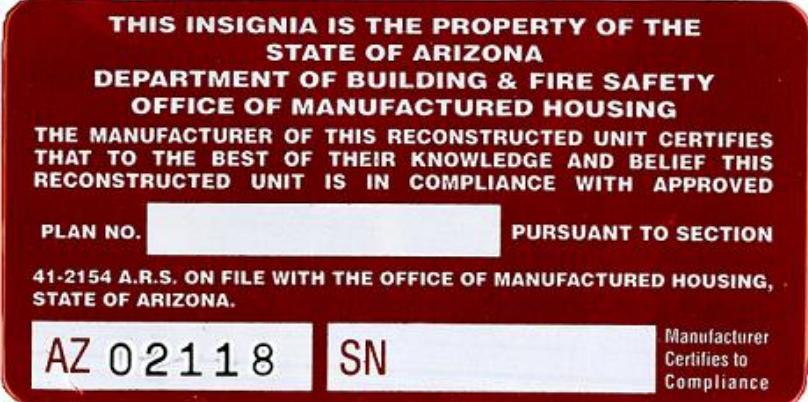
- Zoning compliance, including setback requirements
 - Site grading, drainage
 - Driveways and parking
 - Accessibility compliance to building
 - Other on-site construction, landscaping, etc.
 - Determine flood plain requirements
- 

Alteration and Reconstruction of FBBs

- **Installed buildings are subject to the requirements of the Local Authority Having Jurisdiction (“LAHJ”)**
- **Buildings being moved, re-installed, etc., are subject to the jurisdiction of Arizona**
 - **Plan review**
 - **Inspection**
 - **Etc.**

Reconstruction Insignia

Reconstruction Insignia is affixed to the unit in a location specified in the manufacturer's QA manual or on the plan. Typically this is a plate on the rear of the unit, a panel box, or sometimes above grid ceiling on commercial units.



**THIS INSIGNIA IS THE PROPERTY OF THE
STATE OF ARIZONA
DEPARTMENT OF BUILDING & FIRE SAFETY
OFFICE OF MANUFACTURED HOUSING**

**THE MANUFACTURER OF THIS RECONSTRUCTED UNIT CERTIFIES
THAT TO THE BEST OF THEIR KNOWLEDGE AND BELIEF THIS
RECONSTRUCTED UNIT IS IN COMPLIANCE WITH APPROVED**

PLAN NO. PURSUANT TO SECTION

41-2154 A.R.S. ON FILE WITH THE OFFICE OF MANUFACTURED HOUSING,
STATE OF ARIZONA.

AZ 02118 **SN** Manufacturer
Certifies to
Compliance

Documents


Approved Plans – State approved installation and/or foundation plans are required for the following:

- Residential and commercial factory built buildings require a site-specific State approved foundation plan and installation plan, regardless of location.

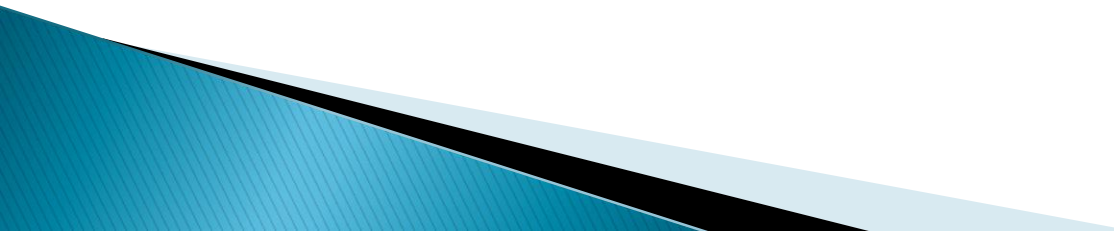
Exceptions:

- Single wide commercial offices temporarily used for construction, not being used by the public.
- Equipment buildings not used by the public (i.e. pump houses, telecommunication equipment shelters, etc.)

Design and Construction Approval Requirements

- Engineer Seal required on all plans
 - Construction classification by type, use and occupancy classification, area dimensions, occupancy load, etc.
 - Structure and design loads and calculations
 - Electrical loads and calculations
 - Water and sewer schematics
 - ADA Requirements (*commercial buildings*)
 - Heat Loss Requirements (*residential buildings*)
 - Flood Plain site-specific plan approval
 - Fire Sprinklers (*when required by zoning*)
- 

Modular Foundation Plan Requirements

- **Site plan approved by Local Zoning for setback and separation**
 - **Water and sewer lines identified from taps or meter to unit, type and size of material used**
 - **One-line electrical drawing : amps at meter and unit; conduit size; type, quantity, and size of conductors; grounding system**
 - **Foundation system details, dimensions, materials, connections and fastening, etc.**
 - **Foundation design unique to each building site**
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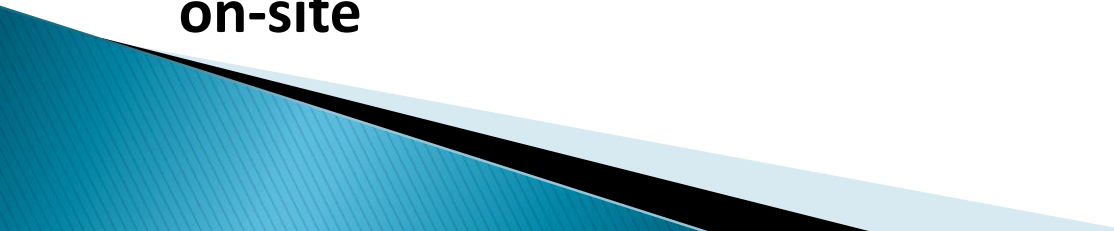
Documents

Insignia and labels

- **Installer insignia – An installer or contractor shall affix and complete an Arizona insignia of approval to each manufactured home , mobile home, or single-family factory-built building as certification of compliance with State statute and rules.**
 - **Insignias are affixed at the tail-light end of each unit, approximately 1 foot up and 1 foot over from the road side.**
- **Labels or insignia present on building as appropriate.**

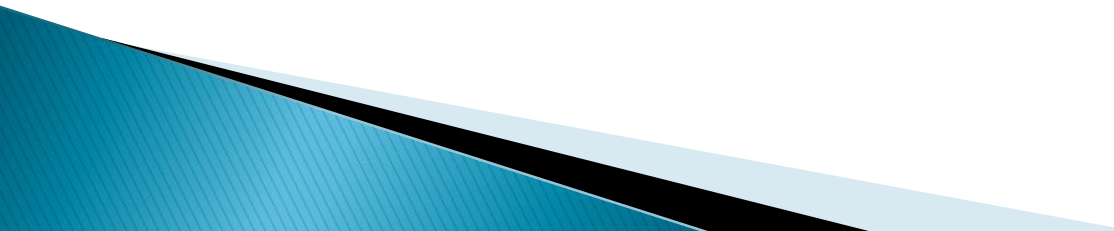
Is it a HUD Manufactured Home or a Residential Modular?

Issues:

- **Consumers, retailers, installers or LAHJ aren't aware of the differences**
 - **Permitting processes do not request home specific information to identify type of home**
 - **Foundation and/or installation plan not submitted to LAHJ and State for approval**
 - **Improperly identified and appraised**
 - **HUD manufactured home and modular may look identical on-site**
- 

Terminology

Manufactured Home – Structure built on or after June 15, 1976. A Manufactured Home is designed and constructed to the Federal Manufactured Construction and Safety Standards and is so labeled. The home is transportable in one or more sections. In traveling mode, the home is eight feet or more in width and forty feet or more in length. The home is:

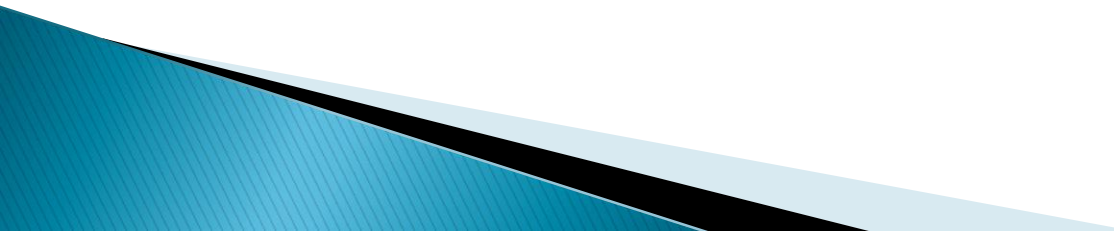
- At least 400 square feet
 - Built and remains on a permanent chassis
 - Designed to be used as a residence with a permanent foundation
- 

Manufactured Home



Terminology

Factory-built building (“Modular”) – Commercial and residential modular buildings are structures which are manufactured in an off-site facility and transported to the installation site. Modular buildings are constructed in compliance with state adopted building codes. They may have a permanent chassis, removable chassis, or steel perimeter framing.



Residential Modular



Commercial Modular



Can you tell the difference between a manufactured home and a residential modular?

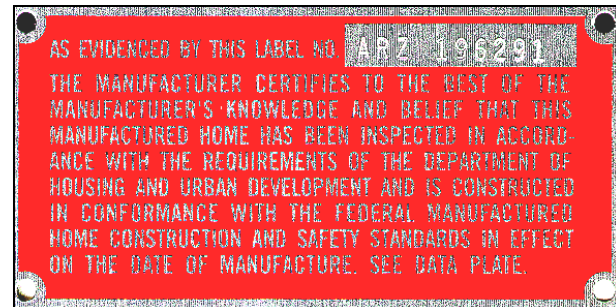


One is built to the adopted building codes, the other is built to Federal Construction Standards (HUD).



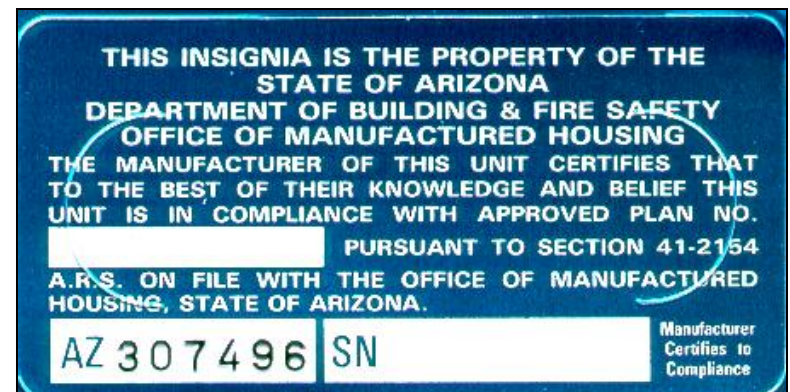
The only way to really know if a home is a manufactured home or a modular residential is to look for labels and insignias.

Manufactured homes will have HUD labels on each section of home, 1 foot in and 1 foot up from road side. May be located on side of unit at rear for on-site lap siding installation



Manufacturer's FBB (“Modular”) Insignia

Modular Insignia is affixed to unit in location specified in the quality assurance (QA) manual or on plan. Typically the insignia is placed at the rear of the unit, at or in the panel box, or sometimes above grid ceiling on commercial units.



Residential modular homes will have a manufacturer's insignia on each section of home. They may be located per building plan or quality assurance manual, near or on the main electrical panel box, or in a similar manner as a HUD label.



**Manufacturer's Insignia
above suspended ceiling**



Installation Insignia

Installation Insignia is required for legal installation. At least one Installation Insignia is required for the unit, not per section. In some cases, Installers may have multiple types of licenses, requiring them to use more than one insignia per building. Affixed to rear of home.

THIS INSIGNIA IS THE PROPERTY OF THE STATE OF ARIZONA DEPARTMENT OF BUILDING AND FIRE SAFETY OFFICE OF MANUFACTURED HOUSING. THE LICENSEE LISTED BELOW CERTIFIES THAT THE INSTALLATION WORK PERFORMED IS IN COMPLIANCE WITH THE RULES AND REGULATIONS OF THE OFFICE.					
LICENSE NUMBER		CLASS		DATE	
AZ 242270		SN			
WORK PERFORMED:					
GAS	<input type="checkbox"/>	WATER	<input type="checkbox"/>	SEWAGE	<input type="checkbox"/>
ELECTRICAL	<input type="checkbox"/>	BLOCKING	<input type="checkbox"/>	ANCHORING	<input type="checkbox"/>
				SKIRTING / AWNING	<input type="checkbox"/>
				COOLER / AIR CONDITIONER	<input type="checkbox"/>

Proper way to affix an installation insignia



Questions?

Department of Fire, Building and Life Safety

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